

with the iron and reducing agent-containing first prebatch mix. In certain embodiments of this invention the remaining ingredients are formed into two additional prebatch mixes. The first additional prebatch mix (i.e. the second prebatch mix) is made up of a portion of the soda ash, and all the titania (if used) and the erbium oxide. The second additional prebatch mix (i.e. the third prebatch mix) is then made up of the remaining ingredients which thus normally includes the rest of the sand (e.g. 60-65 parts and preferably about 61.5 parts, per hundred) and soda ash, and all of the dolomite, limestone, boric acid and salt cake to be used in the final batch.

DETL:

Batch Ingredient Parts by Wt. sand about 70-73 soda ash about 20-26 dolomite about 16-19 limestone about 5.5-6.8 boric acid about 0.5-21 salt cake about 0.2-0.7 rouge (Fe._{sub.2}O._{sub.3}) about 0.5-0.8 titania about 0.1-1.0 erbium oxide about 0.5-3.0 Si (metal) about 0.01-0.12 SiO about 0.02-0.3

DETL:

Ex. 1	Ex. 2	Ex. 3	Ex. 4	Ex. 5	Ex. 6	Ex. 7	Ex. 8	Ex. 9	Ex. 10	Ex. 11	Ex. 12
Sand 71.50	71.50	71.50	71.50	71.50	71.50	71.50	71.50	71.50	71.50	71.50	Soda ash 23.70
Potash 0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Alumina 0.00
18.32	18.32	18.32	18.32	18.32	18.32	18.32	18.32	18.32	Dolomite 18.32	18.32	18.32
6.10	6.10	6.10	6.10	6.10	6.10	6.10	6.10	Limestone 6.10	6.10	6.10	6.10
0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	Boric acid 0.89	0.89	0.89	0.89
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	Salt cake 0.50	0.50	0.50	0.50
0.60	0.60	0.58	0.60	0.58	0.60	0.58	0.60	0.50	0.50	0.50	0.50
0.12	0.00	SiO 0.01	0.02	0.01	0.20	0.21	0.21	0.20	0.20	0.19	0.10
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.17
2.00	0.50	2.00	1.70	2.00	1.70	1.50	1.50	1.70	2.00	TiO. _{sub.2} 0.40	1.00
0.20	0.20	0.25	0.20	0.19	0.40	0.25	0.00	0.00	Thickness 4.1 mm	4.1 mm	4.1 mm
mm 4.1 mm	4.1 mm	4.1 mm	4.1 mm	4.1 mm	4.1 mm	4.1 mm	4.1 mm	% Lta 73.14	70.75		
77.40	71.40	72.14	72.94	67.41	71.88	72.00	71.86	70.97	73.34	% UV 41.24	34.61
49.10	39.37	35.04	39.11	31.32	37.59	35.91	36.81	41.84	39.32	% TS 50.76	46.49
54.15	47.87	49.44	50.17	42.72	49.48	48.45	48.05	46.19	51.89	% IR 31.25	26.49
33.54	27.26	30.37	30.48	22.07	30.35	28.60	27.75	24.07	33.33	wt.% FeO 0.160	0.185
0.149	0.180	0.164	0.163	0.213	0.164	0.173	0.178	0.200	0.150	% Ltc (Y) 73.30	70.85
78.43	71.77	72.34	73.23	67.81	72.05	72.33	72.29	71.75	73.44	x 0.3077	0.311 0.3023
0.3055	0.3089	0.3074	0.3071	0.3087	0.3082	0.3067	0.3013	0.308	y 0.3111	0.3181	
0.3153	0.3104	0.3152	0.3131	0.315	0.3141	0.3161	0.3143	0.3081	0.3107	Dom. Wave.	
nm 435.6	569.1	489.2	472.0	478.8	474.6	485.4	466.0	489.6	483.6	478.5	565.5 c Ex.
Purity 1.69%	0.73%	2.97%	2.38%	0.55%	1.38%	1.23%	0.81%	0.74%	1.46%	4.11%	1.85% L*
88.59	87.41	90.97	87.86	88.13	88.56	85.91	87.99	88.13	88.11	87.85	88.66 a* 1.26
-0.44	-3.43	0.56	-0.11	0.14	-0.85	0.31	-0.90	-0.77	-0.41	1.59 b*	-2.16 0.83 -1.58
-2.74	-0.51	-1.51	-0.87	-0.94	-0.32	-1.19	-4.20	-2.25	Ex. 13	Ex. 14	Ex. 15 Ex. 16
Ex. 17	Ex. 18	Ex. 19	Ex. 20	Ex. 21	Ex. 22	Ex. 23	Sand 71.50	71.50	71.50	71.50	71.50
70.50	71.40	66.50	71.40	71.40	72.00	72.00	Soda ash 23.70	23.70	23.70	23.70	23.20
23.70	23.94	23.70	23.70	23.70	23.70	23.70	Potash 0.00	0.00	0.00	0.00	1.47
0.00	0.00	0.00	0.00	Alumina 0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00
0.00	Dolomite 18.32	18.32	18.32	18.32	18.32	18.32	0.00	18.32	18.32	18.32	
Limestone 6.10	6.10	6.10	6.10	6.10	6.10	6.10	2.68	6.10	6.10	6.10	Boric acid 0.89
0.89	0.89	0.89	3.54	1.06	21.24	1.06	1.06	0.00	0.00	Salt cake 0.50	0.50 0.50 0.50
0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.60	0.58	0.58	0.65 0.80 0.80
0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.12	0.12	0.08	0.10 0.00 0.05 0.00
0.00	0.00	SiO 0.02	0.02	0.02	0.01	0.05	0.00	0.30	0.30	0.30	0.30 Sucrose 0.00
0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	Er. sub.2 O. sub.3	2.00	1.00 1.40
2.00	2.00	2.00	2.00	2.50	3.00	2.00	2.50	TiO. _{sub.2} 0.00	0.00	0.00	0.00 0.05 0.11
0.05	0.08	0.00	0.00	0.10	Thickness 4.1 mm	4.1 mm	4.1 mm	4.1 mm	3.2 mm	3.2 mm	3.2 mm 3.2 mm
mm 3.2 mm	3.2 mm	3.2 mm	3.2 mm	3.2 mm	% Lta 70.35	72.61	71.57	70.59	70.47	71.23	73.26
70.62	71.21	72.00	71.31	% UV 40.88	39.52	43.44	39.60	37.57	40.35	34.37	38.97
35.67	40.97	38.85	% TS 45.88	48.40	46.30	46.41	45.79	46.90	51.12	46.85	49.26
48.82	48.50	% IR 24.10	27.52	23.62	25.00	24.09	25.41	31.33	25.95	30.56	28.40
28.61	wt.% FeO 0.199	0.179	0.203	0.194	0.250	0.245	0.206	0.240	0.208	0.222	0.221
% Ltc (Y) 71.00	73.45	72.51	71.14	71.20	71.89	73.40	71.09	71.24	72.51	71.59	x
0.3018	0.3031	0.3004	0.3033	0.3024	0.3033	0.3085	0.3044	0.3083	0.3049	0.3064	y
0.3068	0.314	0.3091	0.3084	0.3099	0.3108	0.313	0.3096	0.3101	0.3117	0.3105	Dom. Wave. nm 474.9 486.9 481.4 474.5 480.2 480.4 443.8 474.4 562.7 c 479.4 466.3 Ex.
Purity 4.12%	2.80%	4.32%	3.41%	3.52%	3.08%	1.08%	2.86%	2.16%	2.41%	2.11%	L* 87.49 88.66 88.21 87.55 87.58 87.92 88.64 87.53 87.6 88.22 87.77 a* 0.47 -2.39 -1.36